

**What is claimed is:**

1. A cross-flow fan for a discharge excited gas laser to circulate laser gas between electrodes disposed within a laser chamber in which laser gas is circulated, wherein the rotating shaft of the cross-flow fan passes through the center of said fan.

2. The cross-flow fan for discharge excited gas laser of Claim 1 in which a hollow section is created within the rotating shaft.

3. The cross-flow fan for discharge excited gas laser of Claim 2, in which the outer diameter of the cross-flow fan  $D$  and the outer diameter of the rotating shaft  $d$  are sized in accordance with the relationship  $d/D \ 0.13$ .

4. The cross-flow fan for discharge excited gas laser of Claim 1, in which the outer diameter of the cross-flow fan  $D$  and the outer diameter of the rotating shaft  $d$  are sized in accordance with the relationship  $d/D \ 0.13$ .

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